

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 26 JUL 2006

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Applicant's or agent's file reference 2406-3WO	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/CA2005/000359	International filing date (<i>day/month/year</i>) 09 March 2005 (09-03-2005)	Priority date (<i>day/month/year</i>) 09 March 2004 (09-03-2004)	
International Patent Classification (IPC) or national classification and IPC IPC: F01K 27/00 (2006.01), F01D 15/10 (2006.01), F17D 1/04 (2006.01)			
Applicant TRI GAS & OIL TRADE SA			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>2</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. 1 and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application			
Date of submission of the demand 07 October 2005 (07-10-2005)		Date of completion of this report 4 July 2006 (04-07-2006)	
Name and mailing address of the IPEA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476		Authorized officer <div style="text-align: right;">Julien Daigle (819) 934-4273</div>	

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (Rule 12.4(a))
 - ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - ☒ pages 1-5 as originally filed/furnished
 - ☒ pages* _____ received by this Authority on _____
 - ☐ pages* _____ received by this Authority on _____
 - ☒ the claims:
 - ☐ pages _____ as originally filed/furnished
 - ☒ pages* 6 as amended (together with any statement) under Article 19
 - ☐ pages* _____ received by this Authority on _____
 - ☐ pages* _____ received by this Authority on _____
 - ☒ the drawings:
 - ☒ pages 1 as originally filed/furnished
 - ☒ pages* 2 received by this Authority on 10 May 2006 (10-05-2006)
 - ☐ pages* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-3</u>	YES
	Claims	<u>none</u>	NO
Inventive step (IS)	Claims	<u>1-3</u>	YES
	Claims	<u>none</u>	NO
Industrial applicability (IA)	Claims	<u>1-3</u>	YES
	Claims	<u>none</u>	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following document:

D1: US 6,167,692 B1 (GENERAL ELECTRIC CO.) 02 January 2001 (02-01-2001)

Novelty and Inventive Step

Claims 1-3 do meet the requirements of PCT Articles 33(2) and 33(3). Document D1, considered the closest prior art, discloses a fuel gas expander system in a gas distribution system of a power plant. The distribution system comprises a high pressure natural gas source being channelled in a primary turbo-expander, said primary expander driving a generator designed for various purposes (electrical, mechanical, etc...). D1 further discloses an intermediate turbo-expander further expanding a portion of said fuel gas expanded in said primary expander wherein each of said expanders have heat exchangers located upstream of them for pre-heating the fuel gas prior to expansion. D1 does not disclose alone, or in combination with any other document, the above fuel gas expander system further including a heat exchanger located downstream of said primary expander for extracting cold temperature for use in one of refrigeration or air conditioning.

Industrial Applicability

Claims 1-3 do meet the requirements of PCT Article 33(4).

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Box No. VIII **Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The description does not comply with PCT Article 5. The expression "there potentially could be a net energy gain, as opposed to a net energy loss..." is a misleading concept with respect to the theory of conservation of energy and perpetual motion.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

- 5 1. A method of generating power from a pressure control station of a natural gas distribution system, comprising the steps of:
- channelling natural gas entering the pressure control station into a turbine (52) which is powered by expansion of the natural gas as the pressure of the natural gas is reduced; and capturing the output of the turbine (52) for application for useful purposes;
- 10 channelling natural gas exiting the turbine (52) through a first heat exchanger (56) to extract cold temperature, accompanying the reduction in pressure, from the natural gas for use in one of refrigeration or air conditioning.
2. The method as defined in Claim 1, the turbine (52) being used to power an electrical
- 15 generator (54).
3. The method as defined in Claim 1, using a portion of the natural gas to power a gas fuelled turbine power generator (58), passing the exhaust gases from the gas fuelled turbine power generator (58) through a first heat exchanger (66) to preheat a liquid and then passing the
- 20 liquid through a second heat exchanger (78) to preheat the natural gas being channelled into the turbine (52) and capturing the output of the gas fuelled turbine power generator (58) for application for useful purposes.

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10 MAY 2006 10.05.06

FIG. 2

